

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the present application.

**Listing of Claims:**

**Claim 1 (currently amended):** Low-resistivity *n*-type semiconductor diamond characterized in containing  $10^{17} \text{ cm}^{-3}$  or more of lithium atoms and nitrogen atoms together; wherein:

the lithium-atom concentration  $C_{Li}$  and the nitrogen-atom concentration  $C_N$  within the low-resistivity *n*-type semiconductor diamond are  $0.1 \leq C_{Li}/C_N \leq 10.0$ ; and  
the center-to-center distance between the lithium atoms and nitrogen atoms is from 0.145 nm to 0.155 nm.

**Claim 2 (canceled)**

**Claim 3 (original):** Low-resistivity *n*-type semiconductor diamond as set forth in claim 1, wherein the low-resistivity *n*-type semiconductor diamond is a single-crystal diamond.

**Claim 4 (original):** Low-resistivity *n*-type semiconductor diamond as set forth in claim 1, wherein:

lithium atoms are doped into interstitial lattice sites between carbon atoms constituting the diamond, and nitrogen atoms are doped into sites where they replace the carbon atoms; and

the lithium atoms and the nitrogen atoms hold arrangements that neighbor each other.

**Claim 5 (canceled)**

**Claim 6 (original):** Low-resistivity *n*-type semiconductor diamond as set forth in claim 4, characterized in having an activation energy of from 0.05 eV to 0.2 eV.

**Claim 7 (original):** Low-resistivity *n*-type semiconductor diamond as set forth in claim 4, characterized in having a resistivity of  $10^3 \Omega \cdot \text{cm}$  or less.

**Claim 8 (original):** A method of manufacturing by a vapor synthesis technique onto a substrate low-resistivity *n*-type semiconductor diamond doped with lithium atoms and nitrogen atoms together, comprising photo-dissociating a source material by photoexcitation utilizing vacuum ultraviolet light.

**Claim 9 (original):** A method of manufacturing low-resistivity *n*-type semiconductor diamond as set forth in claim 8, further comprising irradiating an oxide of lithium set inside a chamber with an excimer laser beam to scatter lithium atoms from the oxide.

**Claim 10 (original):** A method of manufacturing low-resistivity *n*-type semiconductor diamond as set forth in claim 8, wherein source materials for the nitrogen and carbon are in gaseous form, and their supply quantities are  $0.001 \leq \text{nitrogen amt.} / \text{carbon amt.} \leq 0.1$ .

**Claim 11 (original):** A method of manufacturing low-resistivity *n*-type semiconductor diamond as set forth in claim 10, wherein the nitrogen source material is nitrogen gas or ammonia.

**Claim 12 (original):** A method of manufacturing low-resistivity *n*-type semiconductor diamond as set forth in claim 8, wherein the wavelength of the vacuum ultraviolet light is 65 nm or more but 75 nm or less.

**Claim 13 (original):** A method of manufacturing low-resistivity *n*-type semiconductor diamond as set forth in claim 9, wherein during the vapor synthesis the pressure is from 1330 Pa to 20,000 Pa.

**Claim 14 (original):** A method of manufacturing low-resistivity *n*-type semiconductor diamond as set forth in claim 8, wherein during the vapor synthesis the substrate temperature is 100°C or more but 1000°C or less.

**Claim 15 (original):** Low-resistivity *n*-type semiconductor diamond as set forth in claim 2, wherein the low-resistivity *n*-type semiconductor diamond is a single-crystal diamond.